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10/775,429	02/10/2004	Nusrallah Jubran	3216.60US02	9734

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PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.  
4800 IDS CENTER  
80 SOUTH 8TH STREET  
MINNEAPOLIS, MN 55402-2100

EXAMINER
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NOTE, JANIS L

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/775,429

Applicant(s)

JUBRAN ET AL.

Examiner

Janis L. Dote

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 March 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 21-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 21-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on Mar. 16, 2006, has been entered.

2. The examiner acknowledges the amendments to claims 1, 2, 8, 9, 21, 22, 25, and 27 set forth in the amendment filed on Mar. 16, 2006. Claims 1-14 and 21-27 are pending.

3. The objection to the specification set forth in the office action mailed on Dec. 14, 2005, paragraph 6, item (3) has been withdrawn in response to applicants' comments set forth in the response filed on Mar. 16, 2006, page 13, lines 6-18.

The rejection of claims 1-14 and 21-27 under 35 U.S.C. 112, second paragraph, set forth in the office action mailed on Dec. 14, 2005, paragraph 8, with respect to the term "part of a ring" and the limitation that the R groups are a "bond," have been withdrawn in response to applicants' comments set forth in the response filed on Mar. 16, 2006, page 13, lines 6-18, and to

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the amendments to claims 1, 8, 21, and 25 set forth in the amendment filed on Mar. 16 2006.

The rejections under 35 U.S.C. 103(a) of claims 1, 2, 21, 22, 25, and 27 over US 4,415,640 (Goto) and of claims 1, 2, 4-9, 12-14, and 24 over Goto combined with the other cited references, set forth in the office action mailed on Dec. 14, 2005, paragraphs 10-14, have been withdrawn in response to the amendment to claims 1, 8, 21, and 25 set forth in the amendment filed on Mar. 16, 2006. Those amendments to claims 1, 8, 21, and 25 limit the symbol X in the charge transport chemical formula to be "an arylamine group selected from the group consisting of a carbazole group, a julolidine group and a p-N,N-diphenylaminophenylene group." As discussed in the rejection in paragraph 10 of the office action mailed on Dec. 14, 2005, Goto renders obvious a charge transport material represented by compound (11) at col. 5, where the 9-fluorenylidene group substituted with dimethylamino can be replaced with an alkyl group having preferably from 1 to 8 carbon atoms or an alkoxy group having 1 to 8 carbon atoms as taught by Goto. However, the compound rendered obvious over the teachings of Goto does not meet the compositional limitations of the formula recited in instant claims 1, 8, 21, and 25, because the N-N-diethylamine-4-naphthylene group in said

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compound does not meet any of the Markush members for the symbol X, namely a carbazole group, a julolidine group, or a p-N,N-diphenylaminophenylene group, as recited in those claims. Goto does not teach or suggest the charge transport compound recited in instant claims 1, 8, 21, and 25.

4. Applicants' claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 1-14 and 21-27 of this application. Provisional Application 60/466,813 (Application'813) does not provide an adequate written description for subject matter recited in the instant claims for the reasons discussed in the office action mailed on Mar. 22, 2005, paragraph 5, which are incorporated herein by reference. Accordingly, the subject matter recited in instant claims 1-14 and 21-27 is accorded benefit only of the filing date, Feb. 10, 2004, of the instant application.

5. The disclosure is objected to because of the following informalities:

(1) The amended paragraph beginning at page 21, line 12, of the specification, set forth in the amendment filed on Sep. 30,

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2005, discloses that the solubilizing substituent comprises a  $-(CH_2)_nH$  group where  $n$  is an integer between 1 and 50 and one or more of the methylene groups can be replaced by N, C, B, Si, P, or a " $CR_b$  group." However, it is not clear how a methylene group, which is divalent, can be replaced with groups that are not divalent.

(2) The specification also discloses that the solubilizing substituent comprises a  $-(CH_2)_nH$  group where  $n$  is an integer between 1 and 50 and one or more of the methylene groups can be replaced by B or P. See the amended paragraphs beginning at page 3, line 1, page 8, line 21, and page 20, line 23, of the specification, set forth in the amendment filed on Mar. 16, 2006. However, it is not clear how a methylene group, which is divalent, can be replaced with groups that are not divalent.

(3) The amended paragraph beginning at page 21, line 12, of the specification, set forth in the amendment filed on Sep. 30, 2005, further discloses that the solubilizing substituent comprises a  $-(CH_2)_nH$  group where  $n$  is an integer between 1 and 50, one or more of the methylene groups can be replaced by a  $NR_a$  group, a " $CR_b$ " group, a  $CR_cR_d$  group, or a  $SiR_eR_f$  group where the R groups can be a bond. However, it is not clear to what the R groups in the groups are bonded.

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(4) The use of trademarks, e.g., Tedlar [sic: TEDLAR] in the amended paragraph beginning at page 12, line 3, of the specification, set forth in the amendment filed on Sep. 30, 2005, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Applicants' arguments filed on Mar. 16, 2006, regarding the objections in items (1) to (4) above have been fully considered but they are not persuasive.

(1) and (2) Applicants assert that because the "specification clearly indicates that one or more methylene groups can be replaced, one of ordinary skill in the art would recognize that the substituted group would be inserted in the methylene chain in such a way as to provide the appropriate number of bonds to each group." Applicants assert that "no

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objective evidence is needed on this point, since one of ordinary skill in the organic synthesis art would recognize that a substituted group would have to be inserted in a way to provide the appropriate number of bonds to the group."

Applicants further assert that "[t]he specification need not disclose what is well known to those skilled in the art . . . ' See MPEP 2164.05(a)."

Applicants' assertion is merely attorney argument that is not supported by any objective evidence on the present record. The instant specification merely discloses that one of the methylene groups in the group  $-(CH_2)_nH$  can be replaced by N, C, B, Si, P, or a "CR<sub>b</sub> group." The instant specification at page 10, lines 22-24, which states that "[t]he term group indicates the generically recited chemical entity (e.g., alkyl group . . . ) may have any substituent thereon which is consistent with the bond structure of that group . . . no substitution would include within the term that would alter the fundamental bond structure of the underlying group." The instant specification at page 11, lines 6-7, discloses that "[w]hen the term moiety is used, such as alkyl moiety or phenyl moiety, that terminology includes that the chemical moiety is not substituted." Thus, in view of the teachings of the instant specification, a person having ordinary skill in the art would



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not substitute the "C atom" in the "CR<sub>b</sub> group" "in such a way as to provide the appropriate number of bonds" as asserted by applicants, because the substitution would alter the fundamental bond structure of the "CR<sub>b</sub> group." Furthermore, N, C, B, Si, and P cannot also be substituted "in such a way as to provide the appropriate number of bonds" as asserted by applicants, because the substitution would alter the fundamental bond structure of N, C, B, Si, and P. Accordingly, as discussed in the office action mailed on Dec. 14, 2005, given the plain language of the objected disclosure in the instant specification, a person having ordinary skill in the art would conclude that the disclosure of the replacement of the divalent methylene group with N, C, B, Si, P, or a "CR<sub>b</sub> group" was in error. A person having ordinary skill in the art would not have known what is meant by the disclosure of replacing a -CH<sub>2</sub>- with the non-divalent groups N, C, B, Si, P, or a "CR<sub>b</sub> group." Applicants are "required to make clear and precise the terms that are used to define the invention whereby the metes and bounds of the claimed invention can be ascertained." MPEP 2173.05(a)I (8<sup>th</sup> edition, Rev. 3, Aug. 2005).

(3) Applicants assert that the amendments to the specification filed on Mar. 16, 2006, overcome the objection. However, the amendments to the specification did not address the

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disclosure in the amended paragraph beginning at page 21, line 12, of the specification, set forth in the amendment filed on Sep. 30, 2005. Accordingly, the objection stands.

The examiner notes that applicants' response filed on Mar. 16, 2006, did not address the objection set forth in item (4) above.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-14 and 21-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Instant claims 1, 8, and 21 are further indefinite in the phrase "the solubilizing substituent comprises a  $-(CH_2)_nH$  group where n is an integer between 1 and 50, and one or more of the methylene groups is optionally replaced by a . . . B, P . . . ." because it is not clear how a methylene group, which is divalent, can be replaced with groups that are not divalent.

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Instant claim 25 is further indefinite in the phrase " $R_7$  comprises a  $-(CH_2)_nH$  group where  $n$  is an integer between 1 and 50, and one or more of the methylene groups is optionally replaced by a . . . B, P . . . ." because it is not clear how a methylene group, which is divalent, can be replaced with groups that are not divalent.

Applicants' arguments filed on Mar. 16, 2006, have been fully considered but they are not persuasive for the reasons discussed in paragraph 5, items (1) and (2) above.

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1-14 and 21-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Instant claims 1, 8, 21, and 25 recite that in the charge transport compound formula, the symbol X is "a p-N,N-diphenylaminophenylene group."

The originally filed specification does not provide an adequate written description of said symbol X. The originally filed specification at page 22 exemplifies two particular charge transport compounds that are represented by the chemical formulas recited in instant claims 1, 8, 21, and 25, when the symbol X is p-N,N-diphenylaminophenylene. The term "a p-N,N-diphenylaminophenylene group" is broader than the disclosed p-N,N-diphenylaminophenylene because it encompasses substituted p-N,N-diphenylaminophenylene groups. See the originally filed specification at page 10, lines 22-24, which states that "[t]he term group indicates the generically recited chemical entity (e.g., alkyl group . . . ) may have any substituent thereon which is consistent with the bond structure of that group" (emphasis added).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's acting supervisor, Mr. Nam Nguyen, can be reached on (571) 272-1342. The central fax phone number is (571) 273-8300.

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Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD  
Apr. 29, 2006

*James L. Dote*  
JAMES L. DOTE  
PRIMARY EXAMINER  
GROUP 1500  
1700